

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ZIA HOSSAIN, MOHAMED IMAN,
EVGUENIY N. STEVANOV, MOHAMMED TANVIR QUDDUS
and JOE FULTON

Appeal No. 2004-0627
Application No. 09/766,965

ON BRIEF

Before KIMLIN, GARRIS and WARREN, Administrative Patent Judges.
KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-9. The remaining claims in the present application stand withdrawn from further consideration by the examiner. Claim 1 is illustrative:

1. A high voltage MOS device comprising:

a substrate having a first conductivity type for providing a channel of the MOS device;

Appeal No. 2004-0627
Application No. 09/766,965

a first region of a second conductivity type formed in the substrate and having a contact region for electrically coupling to the channel;

a second region of the first conductivity type formed within the first region between the contact region and the channel; and

a field oxide region formed between the second region and the contact region.

The examiner relies upon the following reference in the rejection of the appealed claims:

Williams et al. (Williams)	5,156,989	Oct. 20, 1992
-------------------------------	-----------	---------------

Appellants' claimed invention is directed to a high voltage MOS device which has a high voltage breakdown and low on-state resistance. The device comprises, inter alia, a field oxide region (122) formed between a region (108) having the same conductivity type as the substrate, which region is in another region (113) of a second conductivity type, and a contact region (106, 120). According to appellants, field oxide layer 122 consumes portions of the underlying layer 108 which results in non-uniform doping concentrations throughout layer 108 "that provides higher breakdown voltage and allows for lower on-state resistance" (page 3 of Brief, third paragraph).

Appealed claims 1-9 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Williams.

Appeal No. 2004-0627
Application No. 09/766,965

Appellants have neither grouped nor argued separately the claims on appeal (see page 4 of Brief). Accordingly, all the appealed claims stand or fall together with claim 1.

We have thoroughly reviewed the respective positions advanced by appellants and the examiner. In so doing, we find that the examiner's rejection of the appealed claims is free of reversible error. Accordingly, we will sustain the examiner's rejection for essentially those reasons expressed in the Answer.

As set forth by the examiner, appellants apparently concede that Williams discloses an MOS device that comprises regions 155, 125 and 129 that meet the requirements for appellants' first region of a second conductivity type formed in the substrate, and that regions 163a/169a of Williams anticipate the claimed contact region. Appellants also state that the contact region of Williams "is arguably coupled to the channel under gate 145a through electrode 169a and source region 159a" (page 6 of Brief, third paragraph). Accordingly, we agree with the examiner that the dispositive issue on appeal is whether Williams describes the claimed "field oxide region formed between the second region and the contact region." On this point appellants present the following argument:

As can be seen in FIG. 250 of the reference, there is no field oxide region between p-type source region 159a

and the contact region of region 163a. The contact region abuts source region 159a and shares a common electrode 169a. There is no room for a field oxide region between the second and contact regions, and even if one could be formed adjacent to the contact region, it would overlies source region 159a and interfere with source contact to the device and the operation of the p-channel transistor.

(Paragraph bridging pages 6 and 7 of Brief). Appellants further maintain that neither region 141a nor region 141b, cited by the examiner as field oxide regions, is between contact region 163a and source region 159a as claimed.

The flaw in appellants' argument is that, although it accurately describes the MOS device of Williams, it does not address the thrust of the examiner's rejection. In relevant part, the examiner sets forth the following:

However, Appellant's [sic, Appellants'] argument is not persuasive because Fig. 250 is showing a cross-section of a three dimensional object. William's [sic, Williams'] substrate is **round**; layers 163a and 159a are **circular** in their configuration. This is shown in Fig. 250 where layers 163a and 159a are repeated in different locations (see Fig. 250). Further Fig. 250 shows that field oxide region 141a is located **between** layer a first location of region 159a and a second location of region 163a. The differing locations are attributable to the region's three dimensional, circular configuration. [Paragraph bridging pages 6 and 7 of Answer).

Hence, it is the examiner's position that field oxide region 141a is, in fact, located between a first location of region 159a, the presently claimed "second region," and a second

Appeal No. 2004-0627
Application No. 09/766,965

location of region 163a, appellants' "contact region." The examiner's reasoning, which is technically accurate on its face, has not been refuted by appellants via a Reply Brief or otherwise. Consequently, we find that appellants' MOS device, as presently claimed, is described by Williams within the meaning of § 102.

In conclusion, based on the foregoing, the examiner's decision rejecting the appealed claims is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
)	
)	
)	
)	
BRADLEY R. GARRIS)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
)	
)	
CHARLES F. WARREN)	
Administrative Patent Judge)	

ECK:clm

Appeal No. 2004-0627
Application No. 09/766,965

Robert D. Atkins
Semiconductor Components Industries, LLC
Patent Administration Dept. - MD A230
P.O. Box 62890
Phoenix, AZ 85082-2890